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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/07/2003

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EXAMINER

BURD, KEVIN MICHAEL

ART UNIT

PAPER NUMBER

2631

DATE MAILED: 10/07/2003

17

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/802,590

Applicant(s)

SANTHOFF ET AL.

Examiner

Kevin M Burd

Art Unit

2631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7,9,10 and 13 is/are rejected.
- 7) ☒ Claim(s) 2 and 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

1. This office action, in response to the remarks filed 8/5/2003, is a non-final office action.

Response to Arguments

2. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

3. In response to applicant's arguments, the recitations of "a method for encoding and decoding an ultra-wideband transmission" in claim 5 and "a system for encoding and decoding an ultra-wideband transmission" in claim 10 have not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

Claim Objections

4. Claims 1 and 6 are objected to because of the following informalities: the claims state "before receiving the complete transmission, correlating the received positive pulse pair and the received negative pulse pair in determining whether a correlation error has occurred in the transmission of the positive pulse". From this statement, it is

unclear what the received pulse pairs are correlated with. If the term "with" was inserted between "the received positive pulse" and "the received negative pulse" instead of the term "and", this confusion would be prevented. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 5 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Burnsweig et al (US 4,206,316).

Regarding claims 5 and 10, Burnsweig discloses transmitting a pulse train of bipolar pulse pairs as shown in figure 12. Each bipolar pulse pair comprises a positive and a negative pulse (figure 12) and each of the pulse pairs are disposed in a frame (column 1, lines 34-36). The positive and negative pulses have the same amplitude and pulse width as shown in figure 12. The positive and negative pulses are positioned in a "positive timing window" and a "negative timing window" respectively. Information is encoded in the pulses according to the position of the pulse (abstract).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 3, 4, 6, 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burnsweig et al (US 4,206,316) in view of Hutch (US 3,961,203).

Regarding claims 1 and 9, Burnsweig discloses transmitting a pulse train of bipolar pulse pairs as shown in figure 12. Each bipolar pulse pair comprises a positive and a negative pulse (figure 12) and each of the pulse pairs are disposed in a frame (column 1, lines 34-36). The positive and negative pulses have the same amplitude and pulse width as shown in figure 12. The positive and negative pulses are positioned in a "positive timing window" and a "negative timing window" respectively. Information is encoded in the pulses according to the position of the pulse (abstract). Burnsweig does not disclose, before receiving the complete pulse train, correlating the received positive pulse with the received negative pulse to determine whether an error has occurred in the transmission.

Hutch discloses correlating the received positive pulse with the received negative pulse to determine whether an error has occurred in the transmission before an entire transmission has been received (abstract). It would have been obvious for one of ordinary skill in the art at the time of the invention to incorporate the teachings of Hutch into the transmission system of Burnsweig. By correlating the pulse pair, errors in the transmission can be detected quickly and new data can be sent if necessary.

The combination does not disclose the transmission of the frames occurs in an ultra wideband system. However, it would have been obvious for one of ordinary skill in

the art at the time of the invention to use the method of transmitting pulses disclosed above in any communication system. No matter the size or length of the pulse, the correlation system can determine if an error has occurred and request a retransmission if necessary.

Regarding claim 3, the combination transmits data.

Regarding claim 4, the positive and negative pulses are placed in time slots as shown in figure 12.

Regarding claim 6, Burnsweig discloses transmitting a pulse train as stated above. Burnsweig does not disclose before receiving the complete pulse train, correlating the received positive pulse with the received negative pulse to determine whether an error has occurred in the transmission.

Hutch discloses correlating the received positive pulse with the received negative pulse to determine whether an error has occurred in the transmission before an entire transmission has been received (abstract). It would have been obvious for one of ordinary skill in the art at the time of the invention to incorporate the teachings of Hutch into the transmission system of Burnsweig. By correlating the pulse pair, errors in the transmission can be detected quickly and new data can be sent if necessary.

Regarding claim 7, Hutch discloses calculating correlation errors in the transmission. If an error occurs, a retransmission is requested.

Allowable Subject Matter

7. Claims 2 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The combination of Burnsweig and Hutch does not disclose calculating error rates in the transmission and comparing the calculated error rate to a Typical Minimum Acceptable Bit Error Rate and a Maximum Bit Error Rate for Correction as stated in claims 2 and 8.

Conclusion

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9314, (for formal communications intended for entry or for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Burd, whose telephone number is (703) 308-7034. The Examiner can normally be reached on Monday-Thursday from 9:00 AM - 6:00 PM.

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Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3800.



Kevin M. Burd
PATENT EXAMINER
9/30/03



MOHAMMAD H. GHAYOUR
PRIMARY EXAMINER